Dry Cleaners Environmental Certification Workbook

For use with MassDEP's Environmental Results Program

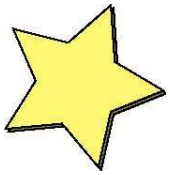
Legend of Icons

The icons below are designed to introduce specific types of information as defined next to each icon.

= Good Management Practices*

= Health Hazards

P^2 = Pollution Prevention*



= Important Information

***Often, Good Management Practices and Pollution Prevention are one in the same.**

If you have questions regarding this workbook or other ERP related questions, please call MassDEP at 617-556-1097.

Table of Contents

?Questions? Call the MassDEP at 617-556-1097.

The Environmental Results Program

1.1 What is the Environmental Results Program?

We at the Massachusetts Department of Environmental Protection (MassDEP) have fundamentally redesigned environmental regulation to be less costly and more effective. We have replaced the 25 year-old system of prescriptive case-by-case permits with comprehensive compliance certifications, industry wide performance standards and streamlined regulation.

This new, common sense approach to regulation is the Massachusetts Environmental Results Program (ERP), a new regulatory system that we believe holds great promise for making it easier to meet — and exceed — Massachusetts' environmental standards. This new approach gives you the flexibility and information you need to do the job, while improving accountability to the public for environmental performance.

ERP streamlines existing pollution control requirements for your dry cleaning company by combining duplicative, and at times conflicting, Federal and state requirements. In addition, your dry cleaning operation will no longer need to get certain air pollution control permits. ERP is a performance-based regulatory program designed to focus on results and outputs; not specific processes or management practices. In exchange, you will have to submit a certification of your compliance with environmental standards. This workbook provides you with the information you need to understand and meet your environmental obligations.

You are required by MassDEP to comply with environmental regulations that apply to you, standards within this workbook and the information contained within ERP Certification Forms. You are required to submit a Certification Form to MassDEP when requested to do so by MassDEP. Failure to comply with these standards (submit the forms or submit the ERP fee) will require correction and possible enforcement action by MassDEP. Please read each standard and the information carefully and ask questions!

MassDEP is here to assist you in understanding and complying with environmental protection rules.

Why DEP is Interested in Dry Cleaning

2.1 Why MassDEP is interested in Dry Cleaning?

Professional dry cleaners are an essential part of our communities; your services save us time and keep our clothing in the best possible condition. Most dry cleaners are family-owned businesses, which have been good neighbors for decades. Dry cleaning has become such a routine part of our lives that we rarely think about it. But growing evidence that the primary chemical used to dry clean clothes, perchloroethylene (perc), can cause damage to our health and the environment, is making people think more about dry cleaning. For example, although most dry cleaners recycle and reuse perchloroethylene within the dry cleaning system, some estimates show that it is possible to lose significant amounts of perchloroethylene from each facility each year. Perchloroethylene is released into the dry cleaning stores, and may be released into the homes of your customers, into your own homes and into the air we breathe.

Perchloroethylene and other cleaning chemicals, if improperly stored and managed, can also be released into the soil and groundwater. Half the people in this country use groundwater (public and private wells) for drinking and many dry cleaners use chemicals that could pollute groundwater if improperly handled. The continuing awareness of environmental risks and the need for protecting public health has resulted in the enactment of more and more laws. The United States Congress has decided that perchloroethylene is one of the toxic air pollutants that will be regulated under the Clean Air Act. This federal law and its regulations are implemented by the United States Environmental Protection Agency (EPA) and state environmental agencies. MassDEP is responsible for implementing air quality protection laws, water protection and waste management laws. This is why MassDEP is interested in improving the ability of dry cleaners to comply with environmental rules.

Key Concepts You Need To Know

3.1 Key Concepts

The following are "plain language" definitions. For more specific definitions, regulatory citations are provided in Appendix A Glossary of Terms. The standards contained in this workbook are designed to protect the environment from the following types of pollution

Industrial Wastewater Discharge

Industrial Wastewater is any wastewater resulting from any process of industry, manufacturing, trade or business, regardless of volume or pollutant content.

Discharge is the release of industrial wastewater to the waters of the Commonwealth from any source through pipes, sewers, or other means.

For dry cleaners, industrial wastewaters include: separator water, vacuum water, washing machine water, compressor water, and boiler blowdown water.

Air Contaminants or an Air Emission

Air contaminant is any substance or man-made physical phenomenon in the open air space and includes dust, gas, mist, odor, smoke, vapor, heat, sound, or any combination of these.

Air Emission is any discharge or release of any air contaminant to the open air space.

For dry cleaners, air emission come from perchloroethylene, dry cleaning machines, boilers, spotting solvents or other contaminants to open air.

Hazardous Waste

Hazardous waste is a chemical waste you intend to discard, that is dangerous to life and the environment when not handled properly.
For dry cleaners, hazardous waste includes waste perchloroethylene, muck, filters for perchloroethylene, saturated rags/wipes/lint, etc.

4.1 FACILITY INFORMATION

Number of Full-Time Employee Equivalents (FTEs):
On the first page of the certification form under Section A (Facility Information), you will find item 1.m. The following description and example will help you to provide the answer:

What is a *full-time employee equivalent (FTE)*? An FTE is defined as 2,000 hours worked. The total number of FTEs at your facility depends only on the total number of hours worked by all employees and not the number of persons working. The total number of hours worked should include all paid vacation, paid holiday, and sick leave hours used by each employee. An FTE should include all employees at the facility location where perc is used; it should not include employees who work at other separate locations (e.g., store fronts at other locations).

To calculate the total number of FTEs at your facility, add up all of the hours worked by *all your employees*, including your (the owner's) time, and divide by 2,000. For example:

Owner: (50 hrs/week) X (52 weeks/year) = 2,600 hrs/year
Part-time help: (15 hrs/week) X (52 weeks/year) X (4 part time employees) = 3,120 hrs/year
Bookkeeper: (2 hrs/week) X (52 weeks/year) = 104 hrs/year
Presser: (24hrs/week) X (52 weeks/year) X (2 pressers) = 2,496 hrs/year
Tailor/seamstress: (12 hrs/week) X (52 weeks/year) = 624 hrs/year
Delivery truck driver: (20 hrs/week) X (52 weeks/year) = 1,040 hrs/year
Total hours = 9,984 hrs/year

$$\text{Total full-time employee equivalents} = \frac{9{,}984 \text{ hrs/year}}{2{,}000 \text{ hrs/FTE}} = 4.992 \text{ or } 5 \text{ FTEs}$$

Location of your Dry Cleaning Business
Co-Residential Facility – If your dry cleaning business is located in a building with an apartment or other residential space, even if vacant when you submit your certification, then your business is considered to be co-residential.

Co-Located Facility - If your dry cleaning business is located in a building *without* a residence, but *with* one or more of the following, then your business is considered to be co-located:

- Children's pre-school
- Health care facility
- Licensed day care center
- Prison
- School (elementary, middle, or high)
- Youth or senior center

Impacts if your dry cleaning business is co-residential or co-located:

Co-residential –

- Installation of a perc machine is prohibited after September 5, 2008.
- Operation of any perc machine is prohibited after December 21, 2020.

Please note: if your business is co-residential and you installed a perc machine between December 21, 2005 and July 13, 2006, you are subject to federal requirements. Information is available from the US EPA at: http://www.epa.gov/region1/contact/index.html

Co-located –
Installation of a perc machine is prohibited after November 5, 2008.
Operation of any perc machine is prohibited after December 21, 2020.

Dry Cleaning Machine Information:

Most of the information you need to complete the machine table can be obtained from the machine itself or from the equipment manufacturer.

Control Devices: Your machines will most likely be equipped with a refrigerated condenser (3^{rd} generation machine) or both a refrigerated condenser and a carbon adsorbed (4^{th} or 5^{th} generation machine).

Standards Before Cleaning You Need To Comply With:

Air Quality Standards

Yes No

A-1 ☐ ☐ On the first day of each month, we record the amount of perchloroethylene purchased in the past month. (Certification Question 14)
- See the suggested form in Appendix B-1.

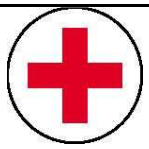
Yes No

A-2 ☐ ☐ On the first day of each month, we total the amount the perchloroethylene purchased in the prior 12 months. (Certification Question 16)
- See the suggested form in Appendix B-1.

Yes No

A-3 ☐ ☐ We store perchloroethylene and other solvents in closed containers. (Certification Question 15)

- We use chemical containers that are in good condition.
- Label all chemical containers regardless of the size. Even label "spot" dispensers and other small containers.



- Both the known and potential adverse health effects resulting from perchloroethylene exposure are cause for concern. As a result, proper handling of perchloroethylene and steps to eliminate environmental releases and to minimize human exposure are essential.

P_2

- Use spigot pumps to dispense new materials, and funnels when transferring wastes to storage containers.
- Consider the cost of waste management before buying new chemicals, materials, or accepting samples from vendors.

Standards Before Cleaning (cont'd)

Hazardous Waste Standards

A-4 Yes ☐ No ☐ We have obtained an EPA Identification Number or a State Notification Number.(Certification Question 25).

- If you do not have a number, registration forms are available on MassDEP's website at: http://www.mass.gov/dep/recycle/approvals/hwforms.htm#gen You must complete the form and submit it to MassDEP.

The following Standards will help you determine your status as a Very Small Quantity Hazardous Waste Generator (VSQG), a Small Quantity Hazardous Waste Generator (SQG), or a Large Quantity Hazardous Waste Generator (LQG),. Dry Cleaners will most likely be VSQGs or SQGs. If you need help, see Appendix B-2.

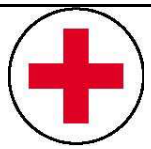
A-5 Yes ☐ No ☐ Last year we generated less than 220 pounds of hazardous waste in any month.(Certification Question 26)

- As a Very Small Quantity Generator (VSQG) you are also required to store less than 2200 lbs. of hazardous waste at any one time. (Certification Question 29) See standard C-16.
- If you answered yes to Questions A-5 and C-16, you are a VSQG.

A-6 Yes ☐ No ☐ Last year we generated more than 220 pounds of hazardous waste but less than 2200 pounds in any month. (Certification Question 26)

- As a Small Quantity Generator (SQG) you are also required to store less than 4,400 lbs of hazardous waste and always store it less than 180 days. See standard C-17.
- If you answered yes to Questions A-6 and C-17, you are a SQG.

- Make sure outside contractors who may be spending time in dry cleaning establishments are aware of emergency procedures.
- Read and understand information on Material Safety Data Sheets. It is important to determine how a hazardous substance should be handled.



- At certain levels, perchloroethylene can affect the central nervous system, producing symptoms such as headache, dizziness, nausea, sleepiness and difficulty in speaking and walking.
- To minimize exposure to perchloroethylene in the workplace, make sure that your dry cleaning shop complies with MassDEP storage and use requirements and that it is adequately ventilated.

P_2

- Consider waste management costs when buying new dry cleaning equipment. Sometimes, a more technologically advanced machine will save in operating expenses.
- Make sure chemical containers won't leak or be damaged by contents such as solvents and perchloroethylene.

Standards Before Cleaning (cont'd)

Hazardous Waste Standards

A-7 ☐ Yes ☐ No Last year we generated more than 2200 pounds of hazardous waste in any month. (Certification Question)

- As a Large Quantity Generator (LQG) you are also required to store hazardous waste less than 90 days. See standard C-18.
- If you answered yes to Questions A-7 and C-18, you are a LQG of hazardous waste.
- Additional standards, not in this workbook, apply to you. Consult 310 CMR 30.

A-8 ☐ Yes ☐ No ☐ N/A We are prepared for emergencies by having procedures to notify all of the proper agencies immediately. (Certification Questions 37 and 38)
Be prepared to notify: - MassDEP at 1-888-304-1133
- State Police at 508-820-2121
- National Response Center at 1-800-424-8802

A-9 ☐ Yes ☐ No ☐ N/A If we are a Small Quantity Generator (SQG) or a Large Quantity Generator (LQG) we are prepared for emergencies by: (Certification Question 37 and 38)

- LQG's should consult *310 CMR 30.341(1)* for additional standards.

a. ☐ Yes ☐ No Having an alarm or other communication system to notify employees.

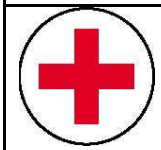
b. ☐ Yes ☐ No Having a telephone, two-way radio or other device which can summon emergency response agencies.

c. ☐ Yes ☐ No Having portable fire extinguishers and spill control equipment.

d. ☐ Yes ☐ No Having adequate supply and water pressure, automatic sprinklers or other fire suppression equipment.

e. ☐ Yes ☐ No Having a program to periodically test emergency equipment.

- Develop an Emergency or "Contingency" plan for your dry cleaning facility.
- Post-emergency numbers by telephones and exits.
- Train all workers on what to do in an emergency.



- People can smell perchloroethylene in air when it is at a level as low as one part per one million parts of air (1 ppm). Often, upon exposure to high levels of a chemical such as perchloroethylene for a long period of time the sense of smell becomes less sensitive to that chemical and one then can only detect it at higher levels.

P_2

- Tightly seal all bungs and lids on chemical containers.
- Weekly checks for leaks and prompt repairs will save you money and benefit the environment.

Standards Before Cleaning (cont'd)

Hazardous Waste Standards

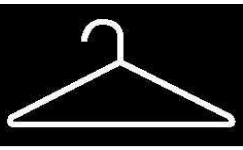
f. Yes ☐ No ☐ Having a program to train employees for emergencies.

g. Yes ☐ No ☐ Having adequate aisle space and clearly marked exits.

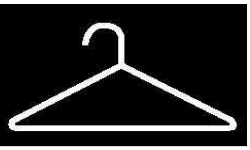
h. Yes ☐ No ☐ Having a program to familiarize and obtain agreements from the local emergency response agencies such as the police department, fire department, hospital, etc.

h. Yes ☐ No ☐ Having a designated emergency coordinator.

j. Yes ☐ No ☐ Having posted names and telephone numbers of emergency coordinators: location of fire alarms and extinguishers; telephone numbers of the fire department; and evacuation routes for that location by the telephone.



Here Is A Helpful Checklist For Emergency Preparedness



Good Management Practices: Emergency Preparedness Checklist

- ☐ Develop procedures for emergencies.
- ☐ Train personnel in emergency procedures.
- ☐ Designate someone in charge, in the event of an emergency.
- ☐ Ensure that your emergency procedures require employees to notify the local fire department, police department and/or DEP in the event of an emergency. You have to notify DEP within two hours after a sudden, continuous or intermittent release to the environment. Perchloroethylene is the most likely chemical dry cleaners will use that is subject to these standards. In general only releases greater than ten (10) pounds should be reported. (The original report should be followed up by a written report to DEP within sixty (60) days.) However, you must also report any emergency or release, which threatens human health or the environment (see below).
- ☐ Post-emergency information next to telephones.
- ☐ Take action to familiarize police, fire department, hospitals and other local emergency agencies with your place of business.
- ☐ Document all emergency procedures, plans, evacuation emergency training and preparedness activities.
- ☐ Keep emergency equipment on hand and make sure all employees are aware of where it is and how to use it.
- ☐ After an emergency occurs, review what happened with employees and correct any problems.
- ☐ Ensure that your emergency procedures identify when you must contact the DEP, Board of Health or National Response Center and how this contact should be made.

If a release (spill or leak) or threat of release, fire, or explosion of hazardous waste that may threaten human health or the environment occurs call:

DEP at 1-888-304-1133
State Police at 508-820-2121
National Response Center at 1-800-424-8802

Standards During Cleaning

4.2 STANDARDS DURING CLEANING YOU NEED TO COMPLY WITH

Air Quality Standards

B-1 Yes ☐ No ☐ N/A ☐ All of our "dry-to-dry" machines installed on or after December 9, 1991 has a refrigerated condenser. (Certification Question 8)

B-2 Yes ☐ No ☐ N/A ☐ All of our dry-to-dry machines installed before December 9, 1991 have either a carbon absorber that was installed before September 22, 1993 or a refrigerated condenser. (Certification Question 7)

B-3 Yes ☐ No ☐ N/A ☐ All transfer machines cease operation after July 27, 2008. Federal MACT regulations state that zero perc emissions are allowed from a transfer machine after that date.(Certification Question 2) New ERP requirements ban operation of transfer machines after July 27, 2008.

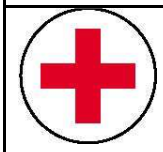
B-4 Yes ☐ No ☐ N/A ☐ If we installed a dry-to-dry machine after December 21, 2005, it is equipped with a refrigerated condenser and a secondary carbon absorber (a 4th or 5th generation machine). The secondary carbon absorber (sometimes called a vapor absorber) reduces the perc vapor in the drum just before the end of the cool-down cycle. (Certification Question 3a).

B-5 Yes ☐ No ☐ We conduct weekly leak checks on the machines in accordance with Appendix C-1 "How to Conduct A Leak Check". (Certification Question 12)

B-6 Yes ☐ No ☐ We use detection equipment for leak checking in accordance with Appendix C-1 "How to Conduct A Leak Check". (Certification Question 12)

B-7 Yes ☐ No ☐ We keep a written log of the leak check activity in accordance with Appendix C-2. (Certification Question 14)

See the suggested form in Appendix C-2.

	• Recover solvent from filter cartridges by draining the filters and heating the cartridges to vaporize and capture additional solvent. • Regularly check air vents for drippage.
	• Perchloroethylene can cause skin irritation if it comes into contact with skin repeatedly or for long periods of time. • If splashed into the eyes, perchloroethylene can cause burning and irritation of the eyes. It is a good idea to periodically monitor your employees' exposure to perchloroethylene at work by having them wear personal exposure badges.
P_2	• Replace faulty/worn gaskets on button trap and around cleaning machine door. • Consider replacing hazardous pre-spotters with water-based, non-chlorinated pre-spotter.

Standards During Cleaning (cont'd)

Air Quality Standards

B-8 Yes ☐ No ☐ If we find a leak it is repaired within 24 hours ***or*** if it cannot be repaired within **24 hours,** we order the parts within 2 days and install the parts within 5 days of receiving them. (Certification Question 13)

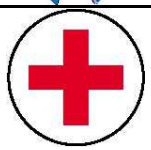
B-9 Yes ☐ No ☐ If we find a leak, a log is kept of the corrective actions in accordance with Appendix C-3. (Certification Questions 14)

B-10 Yes ☐ No ☐ We operate all dry cleaning systems in accordance with manufacturer's specifications and recommendations. (Certification Question 15)

B-11 Yes ☐ No ☐ We close all machine doors immediately after transferring articles and keep the machine doors closed at all times except during maintenance. (Certification Question 6)

B-12 Yes ☐ No ☐ N/A ☐ We have a refrigerated condenser installed on a dry-to-dry machine. We do not vent or release perchloroethylene contained within the dry cleaning machine to the air. If air is pulled through the door when the door is opened after the cycle, then a diverter valve is used. (Certification Questions 8 and 15)

- Use good record keeping practices to keep track of how much material is purchased, delivered and sent off-site as waste.



- Several studies of women in the dry cleaning industry have suggested that perchloroethylene may cause reproductive effects. The studies did not consider all possible causes for this finding, so it is not known for sure if perchloroethylene was responsible. Nevertheless, it would be prudent for pregnant women especially to take precautions to minimize exposure to perchloroethylene as much as possible.

P_2

- Minimize the opening of button traps and lint baskets.
- Minimize the time that the door of the dry cleaning machine is open.

Standards During Cleaning (cont'd)

Air Quality Standards

B-13 Yes ☐ No ☐ N/A ☐ We have a refrigerated condenser installed on a dry-to-dry machine. We do not end the cycle (e.g. open the door) until the temperature on the outlet side of the refrigerated condenser has fallen to 45°F/7.2°C. (Certification Question 10)

a. Yes ☐ No ☐ The temperature sensor has an accuracy of +/- 2°F/1.1°C.

b. Yes ☐ No ☐ We monitor the operation of the refrigerated condenser weekly, using one of the following options: 1. We measure and record the temperature at the end of the cycle on the outlet side of the refrigerated condenser weekly. 2. We observe and record the pressures indicated on the refrigeration system high and low pressure gauges at the end of the cycle. The high and low pressures must be within the ranges recommended by the manufacturer.

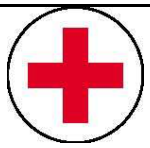
If you do not know where the pressure gauges are located or the normal high and low pressure ranges, call the equipment manufacturer for help. (Certification Question 9)

See the form in Appendix C-4 or C-5.

c. Yes ☐ No ☐ If we find a temperature or pressure problem it is repaired within 24 hours ***or,*** if it cannot be repaired within 24 hours, we order the parts within 2 days and install the parts within 5 days of receiving them. (Certification Question 11)

d. Yes ☐ No ☐ We keep a written log of the temperature or pressure problem, the dates of repair and orders for parts. (Certification Question 14) See the suggested forms in Appendix C-3 and C-5.

- Supervise your deliveries to ensure everything you ordered is delivered and is in good condition.
- Recycle if possible by segregating: cardboard and cardboard boxes; plastic containers and plastic film or wrap; metal and aluminum objects such as hangers; glass which is clean; or used lubricating oil.



- Keep updated copies of Material Safety Data Sheets for all chemicals at the facility and update yearly. This contains important health information.
- Some studies have shown that perchloroethylene can be absorbed by certain foods such as dairy products, meat, fish, poultry, fats, and oils. It's a good idea not to store food or eat and drink in areas where perchloroethylene is stored or used.

P_2

- Involve employees in pollution prevention and safety. All workers should understand and follow, rules and regulations.

Standards During Cleaning (cont'd)

Air Quality Standards

B-14 Yes ☐ No ☐ N/A ☐ If we use a secondary carbon absorber, we do not allow any air-perc gas-vapor stream to bypass the carbon absorber to the atmosphere. (Certification Question15)

a. Yes ☐ No ☐ If we have a carbon absorber exhaust problem, it is repaired within 24 hours ***or*** if it cannot be repaired with 24 hours, we order the parts within 2 days and install the parts within 5 days of receiving them. (Certification Question 11)

b. Yes ☐ No ☐ We keep a written log of the carbon absorber exhaust problem, dates of repair and of orders for parts. (Certification Question 14)

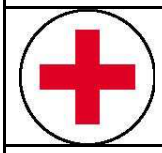
- See the form in Appendix C-3.

B-15 Yes ☐ No ☐ Reserved.

B-16 Yes ☐ No ☐ We keep a copy of design specifications and operating manuals for dry cleaning systems on site. (Certification Question 14)

B-17 Yes ☐ No ☐ We keep all records regarding perchloroethylene purchase receipts, weekly equipment monitoring, weekly leak checks, repair logs, monthly perchloroethylene purchase logs, and yearly perchloroethylene consumption records for 3 years. (Certification Question 14)

- An additional Perchloroethylene Consumption Record Form is located in Appendix C-7.

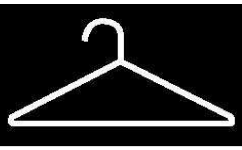
	• Make sure additives you put in the solvent are dissolved before the solvent goes through the filter. • State governmental agencies such as economic development and small business assistance organizations can help your business with understanding business regulations, financial assistance and access to helpful business information.
	• Some studies have shown that nursing women exposed to large concentrations of perc may get perc in their breast milk. The effects of exposing babies to perchloroethylene through breast milk are unknown.
P_2	• Be sure bulky items are completely dry before removing them from the dryer. Do not finish-dry them outside the dryer. • Leaks should be repaired immediately and keep parts on hand. Leaks cost you money, expose workers and contribute to air pollution.

Here Is A Helpful Checklist For Records You Will Need To Keep

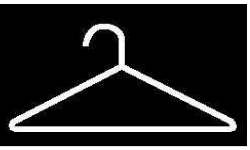
Good Management Practices: Record-Keeping Checklist

- ☐ Keep Perc Consumption Log
- ☐ Keep Receipts for Perc Purchases
- ☐ Keep Logs on Equipment Maintenance, Leak Detection, Equipment Monitoring, and Equipment Repair*
- ☐ Keep Copies of Hazardous Waste Manifests
- ☐ Keep Wastewater Analysis Records
- ☐ Keep Wastewater Disposal Information and Records
- ☐ Keep Wastewater Treatment Information and Records
- ☐ Keep State or Local Agency Communication Records
- ☐ Keep a Copy of the Signed Compliance Certification, Compliance Workbook and Other Forms or Correspondence
- ☐ Keep Equipment Design Specifications and Operating Manuals
- ☐ Keep Copy of Hazardous Waste Generator Notification Form
- ☐ Keep Copies of Land Disposal Restriction (LDR) Notification with Your Manifests

*May be on the same log sheet



Standards After Cleaning



4.3 STANDARDS AFTER CLEANING YOU NEED TO COMPLY WITH

Air Quality Standards

C-1 Yes ☐ No ☐ We keep a copy of design specifications and operating manuals for each perchloroethylene emission control system on site. (Certification Question 14)

C-2 Yes ☐ No ☐ We store perchloroethylene waste in closed, non-leaking containers. (Certification Questions 32 & 33)

C-3 Yes ☐ No ☐ N/A ☐ We drain all filter cartridges in their housings or in another sealed container for at least 24 hours before properly handling them as a hazardous waste.

Industrial Wastewater Standards

C-4 Yes ☐ No ☐ We include separator water in our industrial wastewater discharged to the sewer, container, holding tank, evaporator, or we have a federal or state discharge permit.

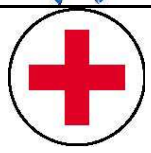
- Dry cleaners should be aware that local agencies may have additional discharge requirements that have to be met.
- Discharges to surface water (e.g. streams, lakes, rivers) require a federal NPDES discharge permit.
- Discharges to groundwater or ground require a MassDEP groundwater discharge permit.
- Separator water may not be discharged to septic systems, cesspools, or leach fields.

C-5 Yes ☐ No ☐ N/A ☐ We never discharge industrial wastewater to surface waters (e.g. streams, lakes) unless we have an NPDES permit from the USEPA. (Certification Question 20)

- If the above statement is true, answer yes.

a. Yes ☐ No ☐ If we have an NPDES permit, we are operating in compliance with the permits conditions.

- If dry detergents cause clogging in your cleaning systems and industrial wastewater discharges, you might consider the use of liquid soap. You should note, however, that liquid soap, being heavier, takes more energy and costs more to transport.
- Most dry cleaners use evaporators to treat separator water or use it as make-up water in cooling towers.



- Testing of air in dry cleaning shops has indicated that perchloroethylene levels can be quite high especially for workers who operate or do maintenance work on dry cleaning machines. Dry cleaning workers should wear respirators when they transfer wet clothing or do maintenance work such as cleaning out button traps, lint traps and stills and replacing filters.

P_2

- Convert vented dry-to-dry machines to a closed loop exhaust system.
- Replace transfer machines with dry-to-dry machines.

Standards After Cleaning (cont'd)

Industrial Wastewater Standards

C-6 Yes ☐ No ☐ N/A ☐ We never discharge industrial wastewater from our dry cleaning operations to the ground unless we have a groundwater discharge permit from MassDEP. (Certification Questions 22)

- If the above statement is true, answer yes.
- Groundwater permits are often difficult to obtain and conditions of these permits are difficult to maintain.
- You may choose to collect wastewater in a tank or container and dispose of it accordingly instead of obtaining a permit.

a. Yes ☐ No ☐ If we have a groundwater discharge permit, we are operating in compliance with the permits conditions.

C-7 Yes ☐ No ☐ N/A ☐ If we have a local sewer discharge permit, we discharge to the sewer in compliance with the permit conditions. (Certification Questions 19b)

C-8 Yes ☐ No ☐ Reserved

C-9 Yes ☐ No ☐ We never discharge perchloroethylene in our industrial wastewater discharge to the sewer. (Certification Question 19c)

- If this statement is true, answer yes.
- Perchloroethylene can leach out to the ground through leaks in the sewer pipes.

C-10 Yes ☐ No ☐ We never discharge flammable materials such as solvents or oils in our industrial wastewater discharge to the sewer. (Certification Question 19c)

- If this statement is true, answer yes.
- Flammable materials create fire and explosion hazards to the sewer workers.

- Some suppliers or vendors can provide you with proper labels and manifests.
- Select reputable chemical suppliers and authorized waste transporters only.
- The easiest way to find out if you are sewered is to check with your local public works, health department, or your landlord. If you are not sewered, you are discharging to a septic tank, cesspool, or leach field.

- Perchloroethylene in high doses has produced liver and kidney damage and cancer in laboratory animals.
- There are no good studies available that indicate perchloroethylene as a cause of cancer in humans, so the subject is still under debate. Given its potential carcinogenicity, it is recommended that workers take precautions to minimize their exposures to perchloroethylene.

P_2

- Drain all cartridge filters in closed containers.
- Change operating procedures to reduce accidental and material losses. These procedural improvements will also improve productivity.

Standards After Cleaning (cont'd)

Industrial Wastewater Standards

C-11 Yes ☐ No ☐ We never discharge corrosive chemicals in our industrial wastewater discharge to the sewer. (Certification Question 19c)

- If this statement is true, answer yes.
- Corrosive materials include materials which have a pH lower than 5.0 or greater than 10.0.
- Corrosive materials, such as acids, "eat up" the pipes and pumps in the sewer system that will contribute to leakage into the ground.

C-12 Yes ☐ No ☐ We never discharge solids in our industrial wastewater discharge to the sewer. (Certification Question 19c)

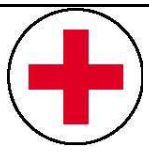
- If this statement is true, answer yes.
- Solids, such as lint, can cause blockage and damage to residential and commercial piping and treatment systems.

C-13 Yes ☐ No ☐ We never discharge heated water in our industrial wastewater discharge to the sewer. (Certification Question 19c)

- If this statement is true, answer yes.
- Heated wastewater has a temperature equal or greater than 104°F/40°C.

Heated wastewater kills the "bugs" that treat the wastewaters in treatment plants allowing the discharge of untreated wastes to the river.

Please be sure to check all pipes that lead outside your building. If the pipe(s) empty to a street drain it may lead to a stream, river, pond, or the pipe(s) may just lead to the ground. These situations typically require permitting.



People who breathe air with high perchloroethylene levels for a long time may have short term memory problems, lose muscle control, be cranky and confused, and have trouble sleeping.

P_2

Do not underload or overload machines. Underloading can cause less efficient solvent use and loss of solvent. Overloading can cause loose belts and make drying difficult.

We make sure chemical containers are placed on a surface that does not have any cracks.

Standards After Cleaning (cont'd)

Industrial Wastewater Standards

C-14 Yes ☐ No ☐ N/A ☐ We store laundry wastewater in containers and haul it off-site and: (Certification Question 24)
(If you store separator water in containers and have it hauled off-site, it must be stored and shipped as Hazardous Waste)

a. Yes ☐ No ☐ We keep records of wastewater analysis;

b. Yes ☐ No ☐ We keep disposal manifests or bills of lading on site, for a period of three years;

c. Yes ☐ No ☐ We use containers that are in good condition;

d. Yes ☐ No ☐ We make sure containers are placed on a surface that does not have any cracks;

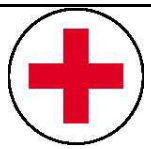
e. Yes ☐ No ☐ We provide a spill containment system if containers are stored outdoors;

f. Yes ☐ No ☐ We restrict entry to the general public into the storage areas; and

g. Yes ☐ No ☐ We label all containers with the words "Industrial Wastewater" or "Non-Hazardous Waste"

Industry associations for dry cleaners can assist your business through information sharing, technical support, understanding government, finding good suppliers and other valuable services.

Make sure wall space where emergency signs and posters are located is uncluttered. It may be helpful to remove all other posters that are posted to the walls.



Pollution can contaminate groundwater and render it undrinkable for years. There are cases of public and private wells being closed because of perc contamination.

P_2

Place saturated lint from lint baskets in sealed hazardous waste containers.

Inspect waste storage containers for leaks.

Standards After Cleaning (cont'd)

Industrial Wastewater Standards

C-15 Yes ☐ No ☐ N/A ☐ We store laundry wastewater in permanent tanks and haul it off-site and: (Certification Question 24) (If you store separator water in permanent tanks and have it hauled off-site, it must be stored and shipped as Hazardous Waste)

a. Yes ☐ No ☐ We have a containment structure with 110% capacity of the total volume of all above ground tanks.

b. Yes ☐ No ☐ We have a bell and light alarm in a conspicuous location if they are remotely/automatically filled tanks. The alarm is activated when the level of wastewater reaches seventy-five (75) percent capacity of the tank and the alarm signal is transmitted to a staffed location. Manually filled tanks are provided with visual or sight glass type of level measurement;

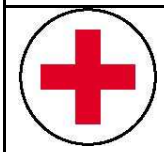
c. Yes ☐ No ☐ We locate our tank(s) to provide year round access for emptying;

d. Yes ☐ No ☐ We have odor control as necessary;

e. Yes ☐ No ☐ Our tanks are made of, or lined with, materials that will not react with, and otherwise be compatible with the industrial wastewater to be stored;

f. Yes ☐ No ☐ We locate our tank(s) in a secured storage area which is free of cracks and gaps that is sufficiently impervious to contain leaks and spills; and,

g. Yes ☐ No ☐ We have a label our tank(s) indicating contents are non-hazardous.

	Dry cleaners may want to combine the various checklists and logs into one or two forms with all of the required information on them. Check with your supplier, industry association or other dry cleaners for examples.
	Improperly maintained equipment could lead to air releases of perchloroethylene that could raise the perchloroethylene air levels around your dry-cleaning shop. Perchloroethylene could also leak from improperly stored waste or chemical containers that could lead to a groundwater contamination problem.
P_2	Often dry cleaning supply companies can supply trays made of plastic or other materials that are put beneath containers to catch leaks or spills.

Standards After Cleaning (cont'd)

Industrial Wastewater Standards

C-16 Yes ☐ No ☐ N/A ☐ If we are a VSQG, we always store less than 2,200 lbs of hazardous waste at any one time. (Certification Question 29)

- See additional information for VSQG's in Appendix D-1.

Hazardous Waste Standards

C-17 Yes ☐ No ☐ N/A ☐ If we are a SQG, we always store less that 4400 lbs of hazardous waste at any one time and always store hazardous waste less than 180 days. (Certification Question 28)

- See additional information for SQG's in Appendix D-1.

C-18 Yes ☐ No ☐ N/A ☐ If we are an LQG, we always store hazardous waste less than 90 days.

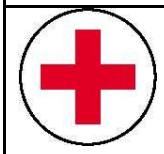
C-19 Yes ☐ No ☐ We ship our hazardous waste to a licensed hazardous waste treatment storage or disposal facility or to a permitted hazardous waste recycler. (Certification Question 30)

C-20 Yes ☐ No ☐ We document our hazardous waste shipments on a hazardous waste manifest and use a licensed hazardous waste transporter. (Certification Question 30)

- A listing of licensed transporters is available at: http://www.mass.gov/dep/recycle/hazardous/transpor.htm

Keep records on all environmental management or safety related activities.

Occasionally, move caution and emergency posters to different locations so they will be noticed and read.



Studies have shown that dry cleaners can carry perchloroethylene home on their hair, clothes and breath. As a result, workers and their families can breathe air at home that has much higher concentrations of perchloroethylene than the typical "background" perchloroethylene concentration in the homes of non-dry cleaners.

P_2

Clean lint filters often to maintain equipment efficiency, extend equipment life and reduce maintenance requirements in other parts of the dry cleaning system.

Standards After Cleaning (cont'd)

Hazardous Waste Standards

C-21 Yes ☐ No ☐ We label and mark our hazardous waste containers with the words HAZARDOUS WASTE, the name of the waste and type of hazard (e.g., toxic, flammable) and unless we are a VSQG, the date we started storing. (Certification Question 34 and 39)

- See example labels in Appendix D-4.
- In most instances the type of waste is perchloroethylene and the hazard type is toxic.

C-22 Yes ☐ No ☐ We keep waste containers closed except when adding waste. (Certification Question 32)

C-23 Yes ☐ No ☐ We use waste containers that are in good condition. (Certification Question 33)

- Waste containers that are dented, leaking or very rusty are considered not in good condition.

C-24 Yes ☐ No ☐ We segregate different wastes into separate containers.

- Waste oil must not be mixed with other waste.

C-25 Yes ☐ No ☐ We have designated an area for storage of only hazardous wastes, it is separated from other areas of operation and it is clearly marked. (Certification Question 31)

- Marking can include a visible line, floor tape or fence.

C-26 Yes ☐ No ☐ We place containers on a surface that does not have any cracks and that will contain leaks and spills. (Certification Question 35)

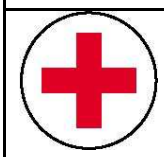
- Generally, intact concrete will contain leaks or spills.

C-27 Yes ☐ No ☐ N/A ☐ If we store waste in containers or tanks outdoors, we maintain a spill containment system.

- See example of spill containment system and storage/container requirements in Appendix D-5.
- Spill containment must hold either 10% of the maximum volume that can be stored and/or 110% of the volume of the largest single container. (Whichever is greater)

You may want to keep manifests and shipping records indefinitely so you can always prove that you handled your waste properly.

Make sure the fire department knows about your emergency and evacuation plans.



Make sure you have personal protective equipment for emergencies (such as: goggles, gloves, masks, etc.) and all of your employees known when and how to use it.

Use decals describing the hazards of perc by placing them on dry cleaning machines and other appropriate areas.

P_2

Make sure all old chemicals that are no longer needed are disposed of properly.

Keep hazardous wastes separated from non-hazardous wastes to decrease risk of contamination.

Standards After Cleaning (cont'd)

Hazardous Waste Standards

C-28 Yes ☐ No ☐ N/A ☐ We restrict entry of unauthorized people into the hazardous waste storage area. (Certification Question 19)

C-29 Yes ☐ No ☐ N/A ☐ We post a sign with the words "HAZARDOUS WASTE" in this area and the sign has letters that are at least one inch high. (Certification Question 31)

- See sign example in Appendix D-6.

C-30 Yes ☐ No ☐ N/A ☐ We separate different types of hazardous wastes in our storage area and stack containers by using pallets.

C-31 Yes ☐ No ☐ In a fire emergency, we would either attempt to extinguish the fire or call the local fire department. (Certification Question 38)

C-32 Yes ☐ No ☐ In the event of a perchloroethylene spill or leak greater than ten (10) pounds we would notify MassDEP within two (2) hours and follow up the original notification with a written report to MassDEP within sixty (60) days. (Certification Question 36)

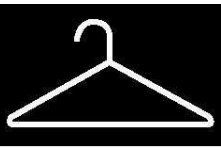
- Releases to the environment could include releases outside of the building, releases to the air, releases to the ground, releases to a storm drain and/or releases to unlined trenches or sumps.

- In the event of a spill or leak that may threaten personnel or the environment we would notify the local fire department, police department and the appropriate MassDEP Regional Office during normal working hours (8:45AM to 5:00 PM) M-F and ask for the Emergency Response Section at (617) 556-1133.

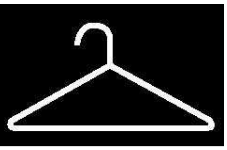
C-33 Yes ☐ No ☐ In a chemical spill or chemical leak emergency, we would contain the spill to the extent possible and as soon as practicable, clean up the spilled materials and contaminated materials (including contaminated soils).

C-34 Yes ☐ No ☐ We inspect our storage area once per week for leaking containers, we have enough aisle space to conduct inspections and unless we are a VSQG, we keep a log of our inspections.

C-35 Yes ☐ No ☐ We maintain our logs, shipping records, and hazardous waste manifests for at least three years. (Certification Question 30)



Here Is A Helpful Checklist To Better Manage Containers



Good Management Practices: Container Management Checklist

- ☐ Containers Are In The Area Designated For Chemical Or Hazardous Waste Storage
- ☐ All Containers Are In Good Condition
- ☐ All Containers Do Not Leak
- ☐ Different Wastes And Chemicals Are Stored In Separate Containers
- ☐ All Containers Are Closed When Not Adding Or Removing Materials
- ☐ All Waste And Chemical Containers Are Labeled and Marked
- ☐ Accumulation Dates Are On All Waste Containers
- ☐ A Spill Containment System Is Used for All Waste Containers Or Tanks That Are Stored Outdoors
- ☐ Storage Areas For Hazardous Waste Are Properly Marked
- ☐ All Containers Are Stored On A Surface That Has No Cracks
- ☐ Sign Posted "HAZARDOUS WASTE" Is In The Waste Storage Area(S)
- ☐ The Storage Area Is Secured Against Entry From General Public
- ☐ All Seals and Lids Are Securely In Place
- ☐ The Proper or Compatible Type Of Container Is Being Used for All Wastes And Chemicals

See Appendix D for More Information on Container Management.

5.1 Innovative Technologies For Dry Cleaners

As in many other industries, technology advances are being pursued in garment cleaning to make cleaning processes faster, better and less expensive. Sound management practices would encourage dry cleaners to stay abreast of new technology advances since they may offer opportunities for you to do garment cleaning in new and effective ways, with reduced environmental impacts and improved health and safety for business owners, employees and customers. Talk to your suppliers and vendors, your trade associations and environmental agencies.

Traditional dry cleaning with perc has served the industry well for more than fifty years and technological improvements continue to reduce the danger from perc exposure or contamination. Perc was introduced as a non-flammable alternative to the highly flammable hydrocarbon solvents that were the industry standard at the time. However, while perc cleans well and is non-flammable, the chemical may cause damage to your health and the environment and in recent years there has been increasing pressure from a number of sources to reduce the use of perc. Exposure to operators, customers and residents near perc dry cleaners is a growing concern. Fortunately, the garment cleaning industry has a growing number of technologies to choose from for reducing perc. Some of these technologies include new, more efficient perc dry cleaning machines, while other technologies completely eliminate perc. For those interested in exploring alternatives to perc, a brief summary of current commercial technologies is listed below. Appearance on this list does not indicate that the cleaning method is safer than perc cleaning regardless of manufacturer claims. Each of these technologies, like traditional dry cleaning, has strengths, weaknesses and limitations.

Further information on these and other technologies is available from your environmental agencies (including MassDEP, OTA, and TURI), trade associations, vendors, and suppliers.

Alternatives to Perc Dry Cleaning

- Carbon Dioxide
- Wet Cleaning
- High Flash Point Hydrocarbon
- Silicone-Based Solvent (GreenEarth)
- Propylene Glycol Ether
- n-Propyl Bromide

Carbon Dioxide (CO2)
CO2 is a naturally occurring part of earth's atmosphere. Instead of the normally found carbon dioxide gas, though, carbon dioxide cleaning is done with liquid carbon dioxide. In order to exist in liquid form, carbon dioxide is kept at high pressure, which, like any use of compressed gas, requires some safety precautions – for example, cleaning equipment that can withstand high pressures. Most of the carbon dioxide used in this type of cleaning is recovered by the cleaning equipment and recycled for re-use. Carbon dioxide cleaning also uses low temperatures and specialized detergents.

Wet Cleaning
Wet cleaning uses small amounts of water, special cleaning compounds, and high-tech washers and drying/tensioning equipment. Employee training is essential for successful wet cleaning operations. With proper employee training, wet cleaning can be safely used for cleaning most garments with similar percentages of garments satisfactorily cleaned as perc cleaning. Note that the water from this process, as with any other industrial wastewater, cannot be discharged to a septic system.

High Flash Point Hydrocarbons
There are a variety of high flash point hydrocarbon solvents in use with specifically formulated additives for garment cleaning. These solvents are similar to the solvents in common use before the introduction of perc for dry cleaning, but are less flammable. Regardless, safety precautions must be in place to minimize fire risks. These solvents are recovered by the cleaning equipment and recycled for subsequent re-use, but proper solvent maintenance is necessary to prevent bacterial growth.

Silicone-Based Solvent (GreenEarth)
The silicone-based solvent cleaning process is similar to that of high flash point hydrocarbon solvents. Silicone-based solvents are used with their own special detergents, must have similar fire safety precautions to the hydrocarbon solvents, have similar cycle times (which are slightly longer than perc cycle times), and are also recovered by the cleaning equipment and recycled for subsequent re-use. One difference is that silicone-based solvents tend to absorb water, which requires advanced separation techniques to remove.

Propylene Glycol Ether
Propylene glycol ether-based solvent cleaning does not require the use of added detergents – the solvent alone can be used for cleaning unless spotting is necessary. Some of these solvents have a high enough flash point to be considered neither flammable nor combustible; however, some fire safety precautions are still used with these solvents. This solvent is also recovered by the cleaning equipment and recycled for subsequent re-use, and removal of water from the solvent requires advanced techniques.

N-Propyl Bromide (n-PB)
N-Propyl bromide-based solvent cleaning may not require purchasing specialized cleaning equipment since some in-use perc cleaning machines can be retrofitted for use with n-PB solvent. If using a retrofitted perc machine, the temperature settings for this process and for garment drying must be lowered from that used for perc dry cleaning. The solvent is recovered by the cleaning equipment and recycled for subsequent re-use. *N.B.* On October 24, 2011, the New York State Department of Environmental Conservation (NYSDEC) petitioned the US EPA to add n-PB to the list of hazardous air pollutants (HAPs) regulated under section 112 of the Clean Air Act. NYSDEC believes the toxicity and increased exposure potential to the user and the general public is likely to result in adverse health effects.

Research has also been conducted on additional technologies such as ultrasonic cleaning.

Appendix A

Common Definitions For Some Terms Used In Workbook

Air Contaminant
Any substance or man-made physical phenomenon in the ambient air space and includes, but is not limited to, dust, soot, gas, fume, mist, odor, smoke, vapor, pollen, microorganism, radioactive material, radiation, heat, sound, any combination thereof, or any decay or reaction product thereof. **310 CMR 7.00**

Boiler Blowdown
Water released from boiler after day use to remove impurities and sediment.

Carbon Absorber
A bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon. Carbon adsorption systems can handle high airflows with low solvent concentrations and reduce solvent vapors in exhaust by 95%. The secondary carbon absorbers required on systems installed after December 21, 2005 (4^{th} generation) reduce the perc concentration in the drum by adsorbing perc vapors left in the drum at the end of the cool-down cycle, before the door is opened.

Colorimetric Detector Tube
A glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

Container
Any portable device, in which an industrial waste is stored, treated, disposed of, or otherwise handled.

Diverter Valve
When the door of the dry cleaning machine is open, this flow control device prevents room air from passing through a refrigerated condenser.

Dry Cleaning System
A process made up of either a Dry-to-dry machine and its ancillary equipment, or a transfer machine system and its ancillary equipment.

Dry-to-Dry Machine
When the washing and drying operations are performed in the same machine.

Emission Any discharge or release of an air contaminant to the ambient air. **310 CMR 7.00**

Appendix A (cont'd)

Hazardous Waste
A waste, or combination of wastes which because of its quantity, concentration, or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, or welfare or to the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed, however, not to include solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act of 1967 as amended, or source, special nuclear, or by product material as defined by the Atomic Energy Act of 1954. **310 CMR 30.000**

Industrial Wastewater
Wastewater resulting from any type of process derived from any industry, trade or business, regardless of volume or pollutant content. Wastewater which contains only sanitary waste, an/or non-contact cooling water, compressor or air conditioner condensate is not considered industrial wastewater for purposes of determining applicability of the regulations at **310 CMR 72.02**.

Muck
After distillation, the residue that remained from using the cleaning solvent.

Perceptible Leaks
Any perchloroethylene vapor or liquid leaks that are obvious from: 1.) the odor of perchloroethylene; 2.) visual observation, such as pools or droplets; or 3.) the detection of gas flow by passing the fingers over the surface of equipment.

Perchloroethylene Consumption
The total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

Refrigerated Condenser
A vapor recovery system into which an air-perchloroethylene gas vapor stream is routed and condensed by cooling the gas-vapor stream. Refrigerated condensers recover solvent emissions during the drying and cool-down cycles by chilling the air stream below the solvents dew point causing the solvent and water vapor to condense.

Responsible Official
Is one of the following:

(a) For a corporation: a president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function who has been duly authorized pursuant to a corporate vote, or a representative of the corporation who has been duly authorized pursuant to a corporate vote provided the representative is responsible for the overall operation of the facility or unit; or
(b) For a partnership a general partner with the authority to bind the partnership or the proprietor, respectively; or
(c) For a sole proprietorship; the sole proprietor; or
(d) For a municipality, state, federal, or other public agency including any legislatively-created authority, board commission, district, etc: either a principal executive officer or ranking elected official who is empowered to enter into contracts on behalf of the municipality or public agency.

Sewage
The water-carrying human or animal wastes from residences, buildings, industrial establishments and/or other places.

Sewer System
Pipelines or conduits, pumping stations, force mains, and all other structures used for collecting and conveying wastes to the site for treatment or disposal.

Storm Drain
Any discernible, confined, and discrete conveyance, including but not limited to any pipe, conduit, ditch, channel, and tunnel used for collecting and conveying storm water run-off directly to the waters of the Commonwealth.

Stormwater Run-Off
Rainfall not absorbed by the ground but is collected by a storm drain.

Tank
A stationary device used to store or contain an accumulation of industrial waste and which is constructed of concrete, steel, or plastic that can provide structural support.

Transfer Machine
When the washing and drying operations are performed in different machines. Examples include washer and dryer(s), a washer and reclaimer(s); or a dry-to-dry machine and reclaimer(s). Operation of transfer machines is prohibited after July 27, 2008.

Temperature Sensor
Thermometer or thermocouple used to measure temperature.

Water Separator
Any device used to recover perchloroethylene from a water-perchloroethylene mixture.

Appendix B

Documentation to be Used With Standards Before Cleaning

Steps to Calculate the Amount of Perchloroethylene You Purchased in the Last 12 Months (B-1)
Are You a Very Small, Small or Large Quantity Hazardous Waste Generator (B-2)

Appendix B-1

Steps to Calculate the Amount of Perchloroethylene You Purchased in the Last 12 Months

1) Use the chart below.2) Add all perchloroethylene purchases made in each of the prior 12 months based on receipts.3) Enter the correct amount purchased next to the correct month.4) For the month(s) that you did not purchase Perchloroethylene, the gallons purchased is zero.5) Add up all the months for a total amount purchased in the last 12 months.

Here is an Easy to Use Chart: Are You a Very Small, Small or Large Quantity Hazardous Waste Generator?

Months	Gallons
1. _____ (Month)	_____ (Amount)
2. _____ (Month)	_____ (Amount)
3. _____ (Month)	_____ (Amount)
4. _____ (Month)	_____ (Amount)
5. _____ (Month)	_____ (Amount)
6. _____ (Month)	_____ (Amount)
7. _____ (Month)	_____ (Amount)
8. _____ (Month)	_____ (Amount)
9. _____ (Month)	_____ (Amount)
10. _____ (Month)	_____ (Amount)
11. _____ (Month)	_____ (Amount)
12. _____ (Month)	_____ (Amount)
Total_____	

Appendix B-2

Are you a Very Small, Small, or Large Quantity Hazardous Waste Generator?

Step 1. From your Hazardous Waste manifest copies; confirm your status as a Hazardous Waste Generator by completing the following:

Facility Name_____ Year_____

Amount of Waste Perchloroethylene Shipped on a Hazardous Waste Manifest

My Actual		*Example*	
Month	**Pounds**	**Month**	**Pounds**
January	_____ LBS.	January	0 LBS.
February	_____ LBS.	February	150 LBS.
March	_____ LBS.	March	0 LBS.
April	_____ LBS.	April	240 LBS.
May	_____ LBS.	May	0 LBS.
June	_____ LBS.	June	150 LBS.
July	_____ LBS.	July	0 LBS.
August	_____ LBS.	August	150 LBS.
September	_____ LBS.	September	0 LBS.
October	_____ LBS.	October	150 LBS.
November	_____ LBS.	November	0 LBS.
December	_____ LBS.	December	150 LBS.

Example:
In the above example, there are 6 shipments, the largest shipment is 240 lbs, generated over the shortest period of time which was 2 months, so the maximum generation rate may be considered to be 120 lbs. per month of HW.

Appendix B-2 (cont'd)

Step 2. Use your largest shipment generated over the shortest period of time, and divide it by the time it took to generate that amount like above.

Example:

My largest shipment was **240** LBS, and
It took **2** Month(s) to generate that amount of waste Generation Rate = Lbs. divided by month(s) = LBS/Month(s). My maximum generation amount as determined above is **120** per month.

Step 3. Use the chart below to find out if you are a Large Quantity Generator (LQG), Small Quantity Generator (SQG) or a Very Small Quantity Generator (VSQG).

	If Yes...	***If No...***
Step 3a Is the amount you determined more than 2200 lbs. per month?	Contact MassDEP, you are a Large Quantity Generator	Go to the next question
Step 3b Is the amount you determined more than 220 lbs. per month but less than 2200 lbs. per month?	You are a Small Quantity Generator	Answer next question
Step 3c Is the amount you determined less than 220 lbs. per month?	You are a Very Small Quantity Generator	

Appendix C

Documentation to be used with Standards During Cleaning

- **How to Conduct a Leak Check (C-1)**
- **Multiple Equipment Leak Check Inspection Log Form (C-2)**
- **Corrective Log Form (C-3)**
- **Equipment Monitoring Log - Refrigerated Condenser (C-4)**
  High and Low Pressure Option
- **Equipment Monitoring Log - Refrigerated Condenser (C-5)**
  Temperature Option
- **Requirements for Dry Cleaners with Boilers (C-6)**

Appendix C-1

How To Conduct A Leak Check

Step 1 Get checklist (Equipment Leak Check Log Form) and leak detection equipment.

Note: The Department of Environmental Protection (MassDEP) requires each facility to use one of the following devices to detect leaks at dry cleaning facilities. Leak detection equipment must be operated and calibrated in compliance with manufacturer's specifications.

1) a halogenated-hydrocarbon detector
2) a portable gas analyzer
3) an alternative device approved by the Department

Halogenated Leak Detector Options

Based on information provided by leak detector manufacturers and tests conducted by other states or groups, the following units are expected to meet EPA guidelines. ***This is not an endorsement.*** *Please note that this is not an extensive list. Further research is recommended to find the best leak detector for your dry cleaning facility. The first seven detectors below are available for$200± The Aeroqual detector is available for $800±*

Product	Manufacturer	Model	Sensitivity
	Inficon Inc	Tek-Mate	<25 ppm
	Inficon Inc	The Compass	<25 ppm
	Nova Systems Products	BOLO Green	5 ppm
	TIF Instruments	TIF8800A	1 ppm
	TIF	TIFXP-1A	<25 ppm
	TIF	TIFRX-1A	<25 ppm
	TIF	TIFXL-1A	<25 ppm
	Aeroqual	Aeroqual 200	1 ppm

In addition, you must check for perceptible leaks, that is, you must use your senses (e.g. sight, smell or touch) to detect leaks.

Step 2 Go to machines and locate proper leak detection points.

Required: Proper leak detection points are hose & pipe connections, fittings, couplings, valves, door gaskets & sealings, pumps, solvent tanks & containers, water separators, muck cookers, stills, exhaust dampers, diverter valves, filter gaskets & sealings and cartridge filter housings.

Step 3 Record readings from the leak detection equipment and record readings on the form for that machine.

Note: A vapor leak is an emission of perchloroethylene vapor from unintended openings in the dry cleaning system. Leaks waste Perchloroethylene and your money. Please fix leaks promptly.

If you find a leak, you must complete steps 4 or 5

Step 4

- Record the leak detection
- Repair the leak within 24 hours.
- Record the activity you used to repair the leak.

Step 5

- If it is necessary to order a new part, order the part within 48 hours of leak detection.
- Fix leak within 5 days after receiving parts.
- Record the activity you used to repair the leak.

Step 6

- Keep all records of leak checks and repairs.

Appendix C-2

Example: Multiple Equipment Leak Check Inspection Log Form

Date _____ Inspector _____

Inspection done by: Monitoring Instrument

Inspect the following items for leaks. Circle Yes or No.

	Signs of Leaking.		
	Machine No.	Machine No.	Machine No.
Hose & Pipe Connections, Fittings, Couplings, Valves	Yes/No	Yes/No	Yes/No
Door gaskets & Sealings	Yes/No	Yes/No	Yes/No
Pumps	Yes/No	Yes/No	Yes/No
Solvent Tanks & Containers	Yes/No	Yes/No	Yes/No
Water Separators	Yes/No	Yes/No	Yes/No
Muck Cookers	Yes/No	Yes/No	Yes/No
Stills	Yes/No	Yes/No	Yes/No
Exhaust Dampers	Yes/No	Yes/No	Yes/No
Diverter Valves	Yes/No	Yes/No	Yes/No
Filter Gaskets & Sealings	Yes/No	Yes/No	Yes/No
Cartridge Filter Housings	Yes/No	Yes/No	Yes/No

If Yes was answered to any of the above, attach a completed corrective action report.

Appendix C-3

Example: Corrective Log Form

Date of initial inspection _____

Machine No._____

Inspector _____

Describe Problem:

Are Parts Needed Yes No
(Circle One)

Date Ordered _____

Date Received _____

Date Installed _____

Date problem corrected _____

Explain:

Appendix C-4

Example: Equipment Monitoring Log Form — Refrigerated Condenser

High and Low Pressure Option

Observe the refrigeration system high and low pressure gauges during the drying cycle on a weekly basis. The high and low pressures must be within the normal ranges specified in the manufacturer's operating manual.

Date	Inspector's Initials	Machine No.	High Pressure	Low Pressure	Are Both Pressures within Normal Range
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No
					Yes/No

If the high or low pressure was outside the normal range, attach a completed corrective action report.

Example: Equipment Monitoring Log Form — Refrigerated Condenser

Temperature Option

Measure the temperature on the outlet side of refrigerated condenser on a weekly basis.

Date	Inspector's Initials	Machine No.	Temperature	Is Temp. <45°F/7.2°C?
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No
				Yes/No

If the temperature was greater than 45° F/7.2 °C attach a completed corrective action report.

Requirements for Dry Cleaners With Boilers

Requirements applicable to all boilers

- The boilers must not smoke or cause a nuisance when operated.
- You may not burn any fossil fuel with an ash content of more than 4% by dry weight, unless you obtain a plan approval from MassDEP.
- You may not burn distillate fuel oil no. 2 (home heating oil) with a sulfur content greater than .3%. Your fuel supplier should be providing you with compliant fuels.

Requirements for boilers with a rated capacity of less than 3 MBTU
(Note: most dry cleaners' boilers are smaller than 3 MBTU)

- Only natural gas, distillate oil (home heating oil, for example) or solid fuel (wood, coal) may be used as fuel. All other fuels, including residual fuel oil, waste oil, and hazardous waste fuel are prohibited.

Requirements for boilers with a rated capacity of 3 MBTU or more

- The boiler must be inspected and maintained according to the manufacturer's recommendation.
- The boiler must be tested for efficient operation at least once per year, and the results of the test must be posted where they can be easily seen on or near the boiler.

Requirements if you are approved to burn residual fuel oil

- If your facility is located in the Berkshire Air Pollution Control District or Merrimack Valley Air Pollution Control District except those cities and towns listed below, you may not burn fuel with more than 1.21 pounds of sulfur per million BTU (2.2% sulfur fuel oil) unless you have a plan approval from MassDEP.
- You may not burn residual fuel oil, landfill gas, used oil fuel, digester gas, or hazardous waste fuel unless you have a plan approval from MassDEP.
- If you are in the City of Worcester, your burner must have a design approval by MassDEP.
- You may not burn coal unless you obtain a plan approval from MassDEP.

Requirements for Dry Cleaners With Boilers (cont'd)

Requirements if you are approved to burn residual fuel oil (cont'd)

- You must file an ERP-Boiler certification if your boiler has a rated capacity between 10 MBTU/HR and 40 MBTU/HR. (Note: a 10 MBTU/HR boiler is large enough to heat a large high school.)

- You must obtain a plan approval from MassDEP if your boiler has a rated capacity of 5 MBTU/HR or greater and less than 10 MBTU/HR and use residual oil with 1% sulfur or above.

- If your facility is located in the following cities and towns in the Metropolitan Air Pollution Control District: Arlington, Belmont, Boston, Brookline, Cambridge, Chelsea, Everett, Malden, Medford, Newton, Somerville, Waltham, or Watertown, you may not burn fuel with more than 0.28 pounds of sulfur per million BTU (0.5% sulfur fuel oil) unless you have a permit from MassDEP.

- If your facility is located in Worcester; the following towns in the Merrimack Valley Air Pollution Control District: Lawrence, Andover, Methuen, North Andover; the Central Massachusetts Air Pollution Control District, the Metropolitan Boston Air Pollution Control District except those cities and towns listed above; the Pioneer Valley Air Pollution Control District, the Southeastern Massachusetts Air Pollution Control District, you may not burn fuel with more than 0.55 pounds of sulfur per million BTU (1% sulfur fuel oil) unless you have a plan approval from MassDEP.

Appendix D

Documentation to be Used with Standards After Cleaning

- **Hazardous Waste Generator Information and Standards (D-1)**
- **The Uniform Hazardous Waste Manifest (D-2)**
- **Example of Waste Container Labels (D-3)**
- **Example of Secondary Containment (D-4)**
- **Example of Storage Area Sign (D-5)**

Appendix D-1

Hazardous Waste Standards (310 CMR 30.351[8]-[10])

The EPA Identification Number (EPA ID) (310 CMR 30.303)

- In order to have your waste accepted by a licensed hauler or treatment/storage facility, you will be assigned a 9-digit number, with the prefix 'MAD' (old numbers may have different prefixes - MAV or MAP), for your location. This number will be entered on each manifest in Block 1.

In order to get an EPA ID, you must register as a hazardous waste generator with MassDEP. The form (Massachusetts SQG/LQG Notification of Hazardous Waste Activity Form) is available on MassDEP's website at: http://www.mass.gov/dep/recycle/approvals/hwforms.htm#gen. You may file it on-line or download the form and mail it to the appropriate regional office:

While you are waiting for a permanent EPA ID, you can use a temporary ID beginning with the letters MP, followed by your 10-digit telephone number.

- The ID number is site-specific. You are required to notify MassDEP's Business Compliance Division of any change in your address, name of company, contact person or generator status.

Shipping Your Hazardous Waste (310 CMR 30.304, 30.305)

- All hazardous waste must be transported in containers that are labeled with the words HAZARDOUS WASTE, the name of the waste, type of hazard (e.g., toxic, flammable), generator's name, address and EPA ID number. Refer to the container standards described on page 8 of this summary.

A list of licensed transporters and Massachusetts treatment, storage or disposal facilities is available at: http://www.mass.gov/dep/recycle/hazardous/transpor.htm . Many transporters are authorized to assist you in preparing your waste shipment.

Standards for Containers and Tanks (310 CMR 30.680, 30.690)

VSQG's - Your accumulation or storage area must meet the following conditions for both containers and tanks.

- Containers and above-ground tanks must be on a surface which does not have any cracks or gaps and is impervious to the hazardous wastes being stored and on pallets if containers are stacked;
- Area must be secured against unauthorized entry;
- Area must be clearly marked (e.g., by a visible line or tape, or by a fence) and be separate from any points of generation;
- Area must be posted with a sign: "HAZARDOUS WASTE" in capital letters at least one inch high;
- An outdoor area must have secondary containment, such as a berm or dike, which will hold any spill or leaks at:
  - — 10% of the total volume of the container, or
  - — 110% of the volume of the largest container, which ever is larger.

Appendix D-1 (cont'd)

Hazardous Waste Standards Continued

(310 CMR 30.351[8])

Standards for Containers and Tanks cont'd (310 CMR 30.680, 30.690)

- Any spillage must be promptly removed.
- Each container and tank must be clearly and visibly labeled throughout the period of accumulation with the following:
  - — The words "HAZARDOUS WASTE"
  - — The name of waste (e.g., waste oil, acetone)
  - — The type of hazard(s) (e.g., ignitable, toxic)
  - — Date on which accumulation began. (SQG only)

- Each container must be in good condition
- Wastes of different types must be segregated. This includes not mixing waste oil or used fuel oil with other wastes. Be careful not to put incompatible wastes in the same container or put wastes in unwashed containers that previously held incompatible wastes.
- Separate containers of incompatible wastes by a berm, dike or similar structure.
- Each container holding hazardous wastes must be tightly closed throughout the period of accumulation, except when the waste is being added or removed.

SQGs - Your accumulation or storage area must meet the above conditions for VSQGs, as well as the following, for both containers and tanks.

- Containers holding ignitable or reactive wastes must be at least 15 meters (50ft) from the property line. If this is not possible or practical you must store such containers in compliance with all applicable local ordinances and by-laws.
- Inspect your accumulation area at least once a week for any leaking or deterioration of your containers. You must have enough aisle space between your containers to allow for inspections.
- Each container and tank must be clearly and visibly labeled throughout the period of accumulation with the date on which accumulation began.

Self-Transport Option Requirements for VSQGs

As a registered VSQG you may transport your own hazardous waste under the following conditions:

- You may transport waste to a licensed treatment, storage or disposal facility; permitted recycling facility; or, another registered generator who will count your waste as part of their generation rate;

- You transport only the waste that you generated on your premises;
- You do not transport more than 440 lbs at one time;
- Your waste is in containers that are:
  - — No larger than 55 gallons in volume
  - — Compatible with the waste
  - — Tightly sealed
  - — Labeled as "HAZARDOUS WASTE"
  - — Labeled with the name of the waste and the type of hazard (In most instances the type of waste is perchloroethylene and the hazard type is toxic)
  - — Tightly secured to the vehicle;
- You do not transport incompatible wastes in the same shipment;
- In the event of a spill or leak of hazardous waste that may threaten human health or the environment you notify MassDEP or the State Police, as described in question C-32 of the workbook;
- You must have a copy of your registration with MassDEP in the vehicle;
- You must be in compliance with federal Department of Transportation (617-494-2770) and Massachusetts Department of Public Safety (617-566-4500) requirements.

Record-keeping for VSQG's

- If you are not using a licensed transporter but are transporting your own wastes, you do not need a manifest form. You must, however, keep a record of the type and quantity, as well as the date, of the transport and treatment or disposal of your waste. You will need proof of the receipt of the waste by the facility or generator.
- Although it is not required you may want to keep your shipping records indefinitely so you can always prove that you handled your waste properly.

If you are a Large Quantity generator (LQG) please contact MassDEP at 617-292-5898 additional information and requirements.

Appendix D-2

The Manifest (310 CMR 30.310)

As a generator you always retain responsibility for your hazardous waste. If your waste is dumped or disposed of improperly, you can be held responsible. It is therefore important that you know where your waste is going and that it is handled properly and safely.

Federal law (the Resource Conservation and Recovery Act of 1976, known as RCRA) requires a national 'cradle to grave' tracking system for hazardous waste. In Massachusetts, every shipment of hazardous waste by a large or small generator must be transported by a licensed hauler and sent to a licensed treatment, storage or disposal facility (TSDF) or a permitted recycling facility and must be accompanied by a shipping document, called the Uniform Hazardous Waste Manifest.

You must use the Universal Hazardous Waste Manifest (EPA Form 8700-22) You are responsible for completing the generator portion of the manifest. Directions for the distribution of the copies are at the bottom of each page of the manifest. A copy will be returned to you when the facility has accepted your shipment.

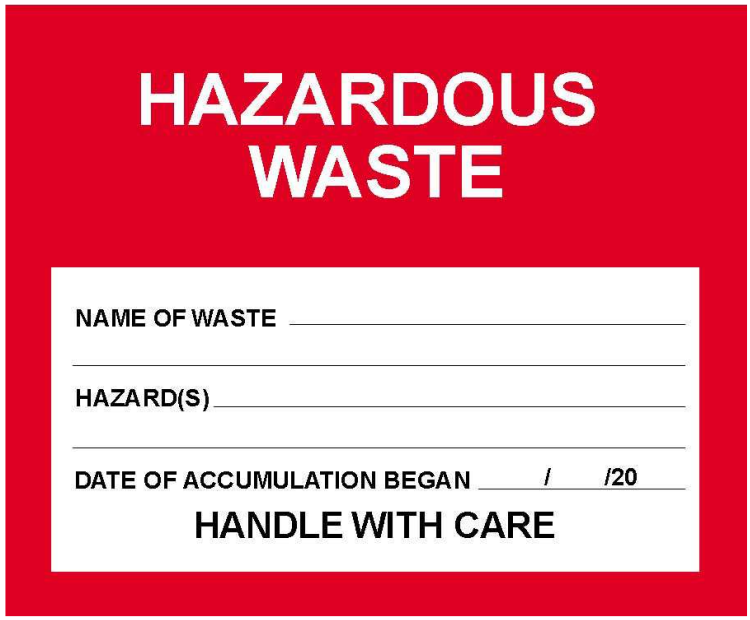
Note the generator's certification statement on your manifest, which you must sign:

> "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true."

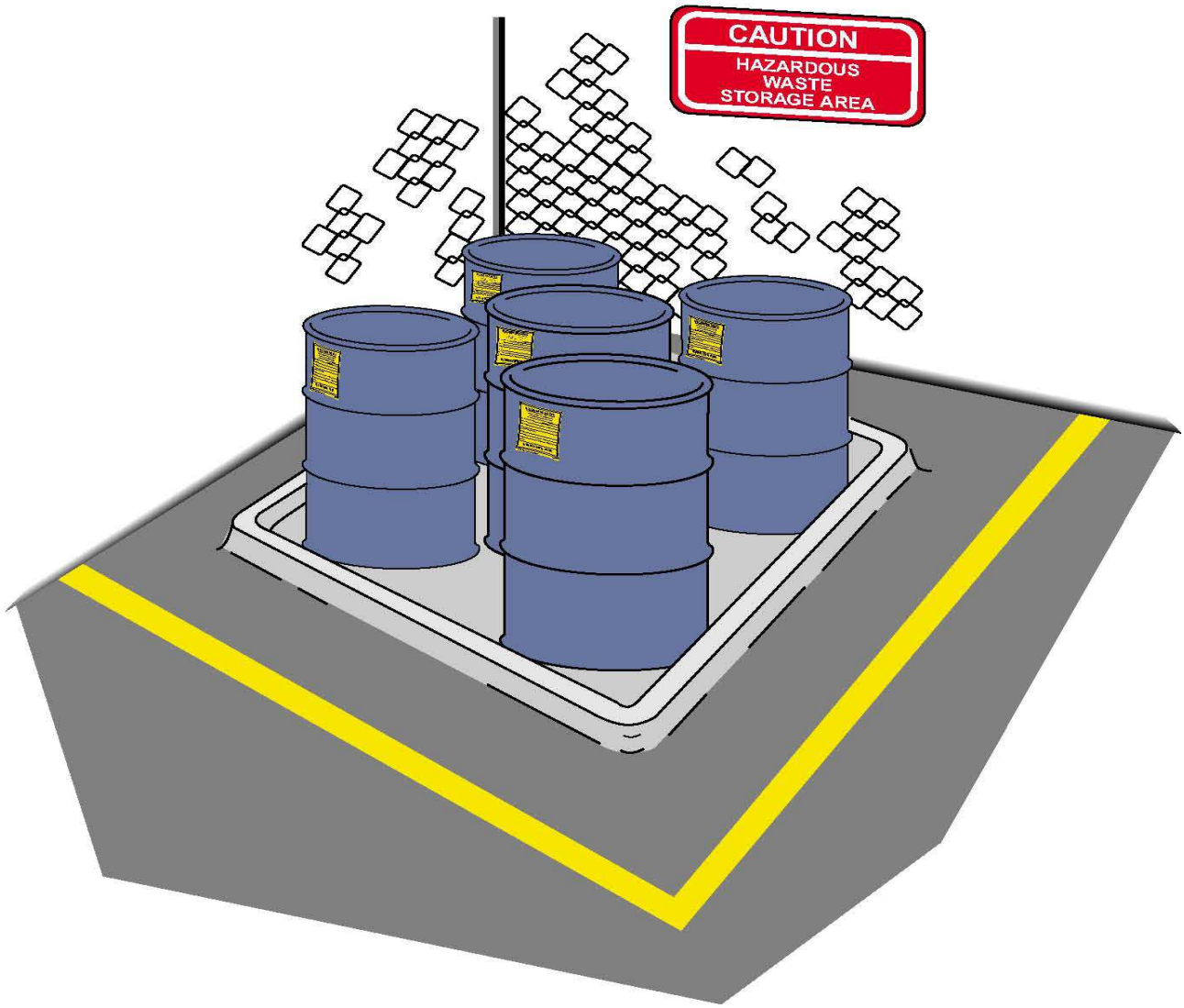
All generators must keep copies of all manifests and any records of tests and analysis done of their hazardous waste for at least 3 years, and for the duration of any enforcement action.

Example of Waste Container Labels
Shipping Label

Accumulation Label



Example of Secondary Containment System



Example of storage area sign